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Clayton GROUP SERVICES

February 14, 2005

Mr. Stan Komperda
**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**
1021 N. Grand Avenue East
Springfield, IL 62702-4072

Clayton Project No. 65263.10-000

**RE: Your Letter of January 21, 2005 to The Lockformer Company**

Dear Mr. Komperda:

The Lockformer Company (Lockformer), a division of Met-Coil Systems, LLC has reviewed your letter of January 21, 2005. Prior to making responses to the specific requirements of that letter, Lockformer wishes to clarify certain factual assumptions, which are relied upon in the letter. Lockformer's responses are provided below after excerpts from the Illinois Environmental Protection Agency's (Illinois EPA) letter:

*The results of 35 Illinois Administrative Code Part 742 (Part 742) Tier 2 analysis performed by Clayton Group Services, Inc. (Clayton) do not corroborate the observed analytical data collected at the site. Specifically, the Tier 2 analysis indicates that 45 ppm of TCE in the upper fill/till soil layer would not result in an exceedence of the TCE groundwater remedial objective of 5 ppb at the property boundary. TCE soil concentrations in the upper fill/till layer in Area 2 before remediation averaged significantly below 45 ppm soil (only one sample had a detection above 45 ppm); however, the highest groundwater concentration detected at the property boundary was 157 ppb. In addition, high levels of TCE were measured along the top of the lower till layer, which are believed to contribute to the observed 157 ppb concentrations. Therefore, the collected data are inconsistent with the modeling results. This discrepancy between the modeling results and collected data was discussed with Lockformer and Clayton on several occasions, but no satisfactory explanation was provided for these findings.*

The 157 parts per billion (ppb) groundwater concentration cited by the Illinois EPA in their comment is not related in any way to the Tier 2 modeling performed by Clayton. The Tier 2 modeling that Lockformer performed at the request of the Illinois EPA, analyzes the migration potential of contaminants in the upper fill/till layer in Area 2 to move down and into groundwater in the mass waste sand and gravel and the subsequent transport of these contaminants in that groundwater toward the Lockformer property line. The 157 ppb groundwater concentration cited by the Illinois EPA in their comment is not groundwater contained in the mass waste sand and gravel, it is groundwater contained in

the lower till, and has nothing to do with the Tier 2 modeling simulation for the upper fill/till.

As the Illinois EPA is aware, there are two groundwater monitoring wells completed in the mass waste sand and gravel approximately half way between the source area in the upper fill/till in Area 2 and the Lockformer west property line. These two groundwater monitoring wells are identified as MW-521 and MW-1117. Monitoring well MW-521 has been sampled three times since installation and has exhibited trichloroethylene (TCE) concentrations ranging from 6.1 to 11 micrograms per liter (ug/L). Monitoring well MW-1117 has been sampled twice since installation and has exhibited TCE concentrations of 40 and 41.8 ug/L.

At the request of the Illinois EPA, Lockformer has installed several groundwater monitoring wells on the Ogden Corporate Center (OCC) property immediately west of the Lockformer site. Several soil borings where groundwater grab samples were acquired were also installed in this area of the OCC property. Three of the groundwater monitoring wells are completed in the mass waste sand and gravel (MW-1111S, MW-1112S and MW-1123), one monitoring well is completed in the lower sand (MW-1110S), and three monitoring wells are completed in the Silurian dolomite (MW-1110D, MW-1111D and MW-1112D). Three of these groundwater monitoring wells are located immediately adjacent to the Lockformer property boundary on the OCC site (MW-1123, MW-1112S and MW-1112D are 35 feet, 33.5 feet, and 33 feet off the Lockformer property line, respectively). The groundwater sampling results from all of these wells, and all the groundwater grab samples of the mass waste sand and gravel acquired from the seven soil borings in this area indicates that there has never been an exceedence of a Class 1 groundwater standard for any constituent. The two groundwater monitoring wells completed in the mass waste sand and gravel directly adjacent to the Lockformer property boundary (MW-1123 and MW-1112S) have not exhibited a detection of TCE.

The data and facts cited above are an integral part of and consistent with use of the Tier 2 modeling Lockformer has performed that analyzes the migration potential of contaminants in the upper fill/till layer in Area 2 to move down and into groundwater in the mass waste sand and gravel, and the subsequent transport of these contaminants in that groundwater toward the Lockformer property line. Lockformer has been conducting very costly soil remediation efforts in the upper fill/till, and the unsaturated portion of the mass waste sand and gravel since June 2003. The completion of these source area remediation efforts is anticipated in the near future. To date, there has not been an exceedence of any Class 1 groundwater standard for any constituent adjacent to Lockformer's Area 2 property boundary. Based on this historic data, it is unclear how a

conclusion could be drawn other than to assume that the potential for migration is highly improbable. Thus, the proposed Tier 2 modeling is appropriate.

*The input data utilized for the Tier 2 analysis by Clayton may be divided into two categories. In the first category are site-specific data collected during field investigation that include hydraulic conductivity, hydraulic gradient, and organic carbon soil content. These site-specific data were reviewed and the values used in the Tier 2 model are reasonable and appropriate for analysis. In the second category are the default data provided by Part 742 with the intention of being used in the Tier 2 analysis. The default data include degradation rate and dilution factor. Although the Illinois EPA believes the use of the default dilution factor overestimates the actual rate of dilution at the site, this default value does not cause a level of significant concern. The Tier 2 analysis for Area 2 shows that degradation is the main mechanism for the contaminant attenuation; however, analytical soil and groundwater data do not indicate significant degradation is occurring at the site.*

Lockformer does not agree that there is no significant degradation occurring at the site in soil and groundwater. A review of Figure 3-3 from the March 5, 2004 report indicates significant degradation of TCE to cis-1,2-dichloroethene (cis-1,2-DCE). For instance, the latest groundwater results from MW-521 indicate a TCE concentration of 6.1 ug/L and a cis-1,2-DCE concentration of 28 ug/L; the latest groundwater results from MW-1117 indicate a TCE concentration of 40 ug/L and a cis-1,2-DCE concentration of 36 ug/L; and the latest groundwater results from MW-500D indicate a TCE concentration of 1,870 ug/L and a cis-1,2-DCE concentration of 3,720 ug/L. A review of the air monitoring results generated from the electrical resistive heating remediation of the upper till/fill soils and the upper till/fill delineation soil sampling results indicate a similar occurrence in the upper till/fill soils. As you are aware, Lockformer is currently undertaking biological pilot tests to enhance these biological processes to make them occur more rapidly and completely; however, the observation that no significant degradation is occurring simply does not match up with the data we have collected to date.

Lockformer cannot find a technical basis for the Illinois EPA's suggestion that the default dilution factor overestimates the actual dilution at the site. In fact, this position is not consistent with the history of discussions and submittals in this matter. Specifically, in preparation for submitting the March 5, 2004 report, the Illinois EPA requested that Lockformer respond to the Illinois EPA's August 20, 2003 comments on Lockformer's Remedial Action Plan for Areas 1 and 2 (submitted July 7, 2003). The intent of the Illinois EPA's request was to allow the March 5, 2004 submittal to be as complete as possible, and if the Illinois EPA found any portion of these comment responses objectionable, they would be discussed prior to the March 5, 2004 report being issued. In

response to specific comment 23 on page 15 of Lockformer's responses, Lockformer made a demonstration utilizing available site data establishing that the Tiered Approach to Corrective Action Objectives (TACO) Tier 2 modeling is appropriately conservative. This demonstration concluded that the Illinois EPA TACO Tier 2 leaching factor over-estimates the transfer of contaminants from soil to groundwater by approximately two orders of magnitude compared to site data. In a similar analysis, Lockformer demonstrated that the Soil Screening Level dilution factor of 20 (actually used in the modeling) also over estimates the transfer of contaminates from soil to groundwater by a factor of approximately 35.

The Illinois EPA suggests that the modeling presented by Lockformer and Clayton cannot be calibrated to site conditions. Proof of the overly conservative nature of the Illinois EPA Tier 2 model can be demonstrated by trying to calibrate groundwater data from monitoring wells completed in the mass waste sand and gravel to the modeling results. The TCE concentrations in groundwater at monitoring wells MW-521 (40 ppb TCE) and MW-1117 (11 ppb TCE) cannot be predicted by the Tier II model default parameters unless degradation is used or, if degradation is not used a dilution factor orders of magnitude greater than the default value is applied. The adoption of assumptions that are incorrect, at worst, or overly conservative at best result in the expenditure of limited remediation assets in an ineffective manner.

*The Illinois EPA had previously expressed its reservations to Lockformer regarding the uncertainty with the default degradation rate and its applicability at the site. The evidence of high contaminant levels close to the property boundary cannot be overridden with a model inconsistent with observed conditions (namely lack of degradation), therefore the Illinois EPA requires that, at this time, the soil remediation objectives be conservatively calculated by utilizing a zero degradation rate or Lockformer utilize the 60 ppb Tier 1 Migration to Groundwater remedial objective for soil. Illinois EPA also requires that Lockformer immediately implement a remedial measure at the property boundary as previously discussed that will achieve and maintain Class 1 groundwater remediation objectives at the property boundary until such time as the Tier 1 Migration to Groundwater value soil objective or approved calculated objective are achieved.*

The Illinois EPA's discussion of the Tier 2 modeling by Clayton and Lockformer is hampered by a misunderstanding of the data and facts developed for the site. In an attempt to clarify the apparent confusion, the following chronological determination of the facts is offered:

1. There was question in the fall of 2003 as to the nature of the groundwater occurrence when the groundwater grab samples from CSB-1839 and CSB-1840 were determined to exhibit concentrations of 77.7 and 157 ug/L, respectively. The Illinois EPA and

their consultant were concerned that groundwater was migrating along the upper surface of the lower till on the west side of Area 2 and possibly crossing the property boundary, and specifically if the groundwater grab samples from CSB-1839 and CSB-1840 were from the mass waste unit aquifer because the lithologic unit from where the groundwater sample was acquired was logged as a silty sand.

2. These concerns on the part of the Illinois EPA resulted in Clayton performing additional field investigations of the lower till on the west side of Area 2. These field investigations showed that there is no groundwater migration along the upper surface of the lower till north of where the mass waste aquifer occurs, and that a transitional lithologic change occurs within the lower till causing it to be a sandy silt in this area. Monitoring well MW-1122S was completed in this area of the lower till, slug tested to determine the hydraulic conductivity of the lower till ($1.52 \times 10^{-5}$ centimeters per second [cm/sec]), and it was confirmed that the groundwater grab samples previously acquired at CSB-1839 and CSB-1840 were of groundwater occurrence in the lower till. During meetings in December 2003, the data from these investigations was discussed and all parties agreed on the interpretation of the data.

3. In order for the March 5, 2004 report to be as complete as possible, the Illinois EPA requested that Lockformer respond to the Illinois EPA's August 20, 2003 comments on the Remedial Action Plan for Areas 1 and 2. It was understood by both parties that the Illinois EPA would bring up for discussion any responses that they did not agree with prior to the March 5, 2004 report being issued. In response to general comment 1 on page four of those responses, the following was stated by Lockformer, "Corroboration of these contaminant transport observations exists in the form of investigation soil borings CSB-1845, CSB-1846, CSB-1844, CSB-1850, CSB-1851, and CSB-1852 along the west side of the Ogden Corporate Center Building, which indicate non-detect concentrations for all soil samples in the mass waste unit and the upper surface of the lower till. As a result, the site contaminant transport data suggest that the only continuous migration pathway available to offsite locations exists in the saturated mass waste unit sediments, with subsequent transport within this groundwater unit toward the west/southwest with its prevailing flow." The Illinois EPA has never suggested that this statement is in any way incorrect or that they disagree with it.

4. In meetings leading up to the submission of the March 5, 2004 report, significant discussion was undertaken with the Illinois EPA as to how the Tier 2 modeling for the upper till/fill should be performed to make it acceptable to them. To summarize, the Illinois EPA directed Lockformer to perform the modeling as follows: 1) the modeling should be a Tier II analysis, and utilize site data for parameterization where the TACO identifies is appropriate; 2) since the Tier 2 modeling allows the use of

degradation, no retardation can be used; and 3) cumulative carcinogenic and non-carcinogenic effects must be considered during the modeling. Based on these discussions, Lockformer prepared and submitted the March 5, 2004 report.

5. On April 14, 2004 the Illinois EPA issued comments on Lockformer's March 5, 2004 report. Of significant importance in this letter are the following:

   a. The Illinois EPA approved the modeling and soil remediation objectives for the upper fill/till silty clay layer for the Former Fill Pipe Area and the Former Vapor Degreaser Area. Biological degradation was used in the modeling for both of these areas.

   b. The Illinois EPA approved the modeling of the soil remediation objectives for the lower till soil in the Former Fill Pipe Area assuming horizontal contaminant migration through the till, and asked that Lockformer additionally evaluate vertical transport modeling of contaminants through the lower till to the bedrock. The horizontal modeling in the lower till utilized biological degradation.

   c. The Illinois EPA never issued any statement disagreeing with any portion of the Lockformer February 16, 2004 responses to their August 20, 2003 comments. The only comment on the March 5, 2004 Lockformer report that touched on Lockformer's analysis in the February 16, 2004 responses was related to the conservative nature of the TACO Tier 2 leaching factor calculation (specific comment 23). This was comment number four of the April 14, 2004 Illinois EPA letter, and related to the fate of groundwater residing in the depression in the lower till in the vicinity of MW-500D. As a result, the Illinois EPA did not dispute Lockformer's analysis of the conservative nature of the modeling calculations.

   d. In comment #5, the Illinois EPA said that they thought that the hydraulic gradient used in modeling groundwater in the mass waste unit on the west side of Area 2 should be adjusted due to the groundwater mound occurring on the Ogden Corporate Center.

6. On April 30, 2004 Lockformer responded to the comments by the Illinois EPA issued on April 14, 2004 related to the March 5, 2004 report. Lockformer's most significant response made to comments by the Illinois EPA turned out to be related to their comment regarding the hydraulic gradient. Lockformer's response pointed out that the Illinois EPA's technical analysis of the hydraulic gradient was not correct. However, in verbal discussions afterward it turned out that the Illinois EPA was not trying to be exact about the calculation, instead, they were trying to add additional

levels of conservative analysis into the modeling because of the contamination on the west side of Area 2 in the lower till.

7. The Illinois EPA issued a letter stating that investigation conducted by Lockformer in Areas 1 & 2 "appear to have adequately defined the extent of contamination in these locations." The Illinois EPA reserved approval of those portions of the report dealing with groundwater modeling and cleanup objectives.

8. Lockformer responded to the Illinois EPA April 14, 2004 comments on the March 5, 2004 report on April 30, 2004. After this time, multiple semi-monthly and monthly meetings were held with EPA and Illinois EPA personnel, where the outstanding issues related to the remedial objectives were discussed. On at least two occasions the Illinois EPA indicated they would contact Lockformer separately to set up an independent meeting to discuss the outstanding groundwater issues related to Areas 1 & 2. This never happened.

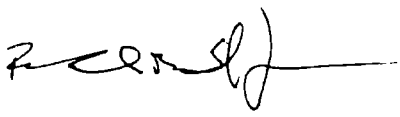
Given the voluminous data that has been developed for the Lockformer site, it appears that the Illinois EPA has not fully considered all the information and analyses submitted by Lockformer. Lockformer believes that both the data and regulations support the modeling that has already been submitted to the Illinois EPA for the development of remedial objectives for the upper till/fill in Areas 1 and 2 of the site, and/or can supply additional analysis to satisfy the Illinois EPA's concerns related to that modeling.

In response to the Illinois EPA's request for implementation of a remedial measure prior to approval of a remediation work plan, it is currently Lockformer's position that implementing a groundwater remedy on the west side of Area 2 in the mass waste sand and gravel to address groundwater contamination in the lower till is impractical and infeasible. As demonstrated by the data, the groundwater monitoring does not indicate any migration has occurred over the property line. The Illinois EPA has commented that Lockformer should implement a groundwater containment remedy in the mass waste sand and gravel on the west side of Area 2, because of the 157 ppb of TCE in groundwater contained in the lower till on the west property boundary. However, the implementation of a groundwater containment system in the mass waste sand and gravel on the west side of Area 2 would provide no appreciable positive effect in reducing the concentration of TCE in the groundwater of the lower till. The diffusion rate of TCE groundwater contamination in the lower till (both laterally and vertically) is slow enough that it has not impacted groundwater in the mass waste sand and gravel offsite, and has not impacted the lower sand to detectable levels onsite or off. Considering all of the facts detailed above, Lockformer does not believe it is necessary or cost effective to implement an active groundwater remedy without first evaluating all the alternatives available to it.

Lockformer instead proposes to pursue Environmental Land Use restrictions in the form of groundwater use restrictions on the adjacent properties to the west of Lockformer, and to continue ongoing monitoring to assuage any concern the Illinois EPA might currently have related to impacts on potential receptors. It should be noted, however, that neither the OCC nor the Olson properties have private wells but instead, are hooked up to Lisle's public water supply system. Additionally, Lockformer will continue to perform the biological pilot testing evaluations to ultimately assist in designing full-scale implementation.

If you have any questions regarding this letter please fell free to contact me at your earliest convenience.

Sincerely,



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**Beverly Kush/R5/USEPA/US** To
02/18/2005 03:34 PM Subject Fw: IOSC - May 15-19 in Miami

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